Claims

1. A process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass, wherein the viscosity ratio of at least two amorphous polyolefins having a different molar mass is less than 0.005 and greater than 4 and a) the amorphous polyolefin having a high molar mass is prepared by solution polymerization in one reactor of an assembly of two or more reactors connected in parallel or in series and the other constituents of the mixture are produced in the other reactors after which the polyolefins are mixed in solution, or b) the amorphous polyolefin having a high molar mass is prepared by solution polymerization in one reactor and the other constituents of the mixture are introduced in the form of a polymer solution into the solution flowing from the reactor, and the solution of polymer mixture obtained according to a) or b) is homogenized and the solvent is separated off.

2. The process as claimed in claim 1, wherein the amorphous polyolefin having a high molar mass has a VN of > 80 ml/g and an M_w of > 90,000 g/mol.

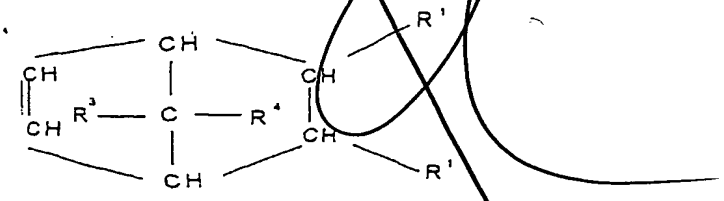
3. The process as claimed in claim 1, wherein the amorphous polyolefin having a high molar mass has a VN of > 100 ml/g and an M_w of > 100,000 g/mol.

4. The process as claimed in claim 1, wherein the amorphous polyolefin having a high molar mass has a VN of > 120 ml/g and an M_w of > 120,000 g/mol.

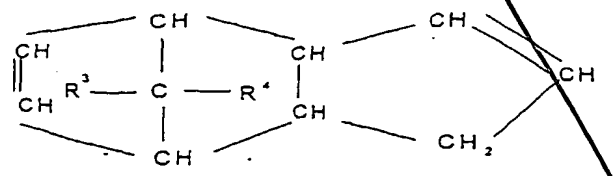
5. The process as claimed in claim 1, wherein the amorphous polyolefin having a high molar mass has a VN of > 150 ml/g and an M_w of > 150,000 g/mol.

6. The process as claimed in any of claims 1 to 5, wherein the amorphous polyolefin is a cycloolefin copolymer.

7. The process as claimed in one or more of claims 1 to 6, wherein the bimodal or multimodal mixture comprises at least one cycloolefin copolymer comprising from 0.1 to 100% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from at least one polycyclic olefin of the formula I, II, II', III, IV, V or VI.



(I),



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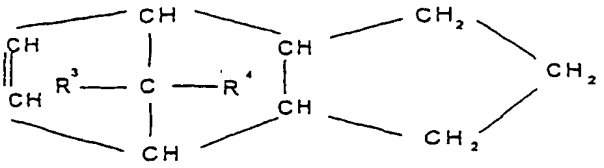
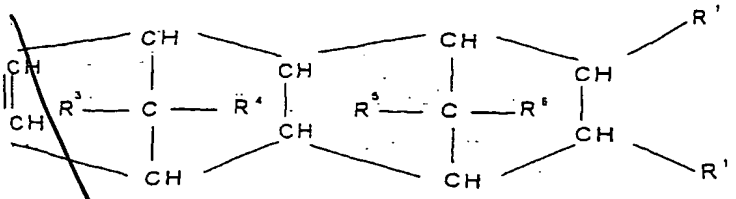
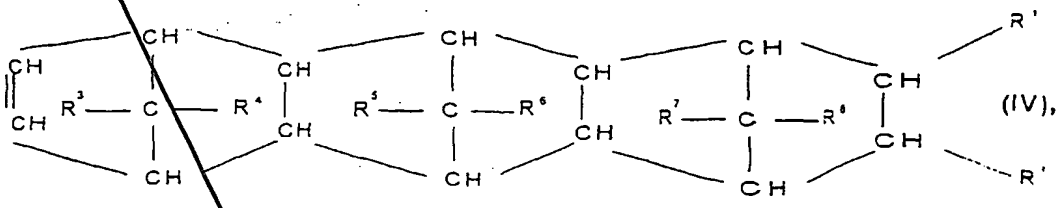


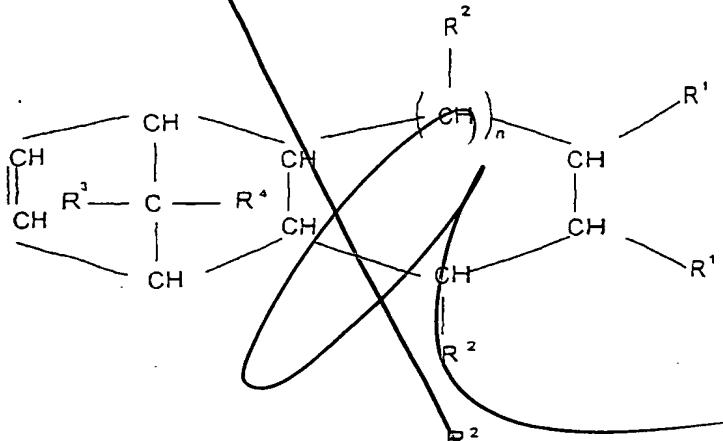
(II'),



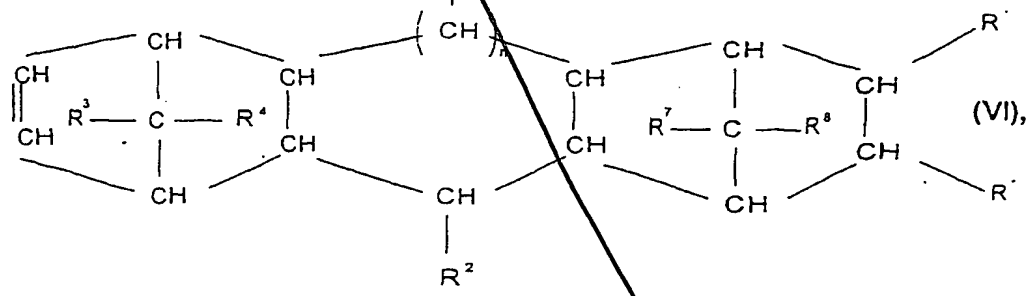
(III),



(IV),



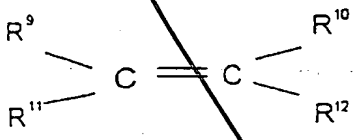
(V),



(VI),

where R^1, R^2, R^3, R^4, R^5, R^6, R^7 and R^8 are identical or different and are each a hydrogen atom or a C_1-C_{20}-hydrocarbon radical such as a linear or branched C_1-C_8-alkyl radical, a C_6-C_{18}-aryl radical, a C_7-C_{20}-alkylenearyl radical or a cyclic or acyclic C_2-C_{20}-alkenyl radical or form a saturated, unsaturated or

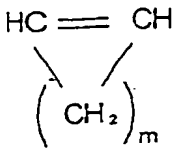
aromatic ring, where identical radicals R^1 to R^8 in the various formulae I to VI can have different meanings, and n can be from 0 to 5, and, if desired, up to 99.9% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from one or more acyclic olefins of the formula VII



(VII),

where R^9, R^{10}, R^{11} and R^{12} are identical or different and are each a hydrogen atom, a linear, branched, saturated or unsaturated C_1-C_{20}-hydrocarbon radical such as a C_1-C_8-alkyl radical or a C_6-C_{18}-aryl radical.

8. The process as claimed in one or more of claims 1 to 7, wherein the cycloolefin copolymers further comprise up to 45% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from one or more monocyclic olefins of the formula VIII



(VIII),

where m is from 2 to 10.

9. The process as claimed in one or more of claims 1 to 8, wherein the cyclic and polycyclic olefins contain one or more of the groups halogen, hydroxyl, ester, alkoxy, carboxy, cyano, amido, imido and silyl.

10. The process as claimed in one or more of claims 1 to 9, wherein the cycloolefin copolymers comprise

polymerized units derived from polycyclic olefins of the formula I or III and polymerized units derived from acyclic olefins of the formula VII.

11. The process as claimed in one or more of claims 1 to 10, wherein the cycloolefin copolymers comprise polymerized units derived from olefins having a norbornene skeleton, preferably from norbornene, tetracyclododecene, vinylnorbornene or norbornadiene.

12. The process as claimed in one or more of claims 1 to 11, wherein the cycloolefin copolymers comprise polymerized units derived from acyclic α-olefins having from 2 to 20 carbon atoms, preferably ethylene or propylene, particularly preferably ethylene.